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PATENT  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Shubh D. Sharma  
Serial No.: 09/483,837  
Filed: January 17, 2000  
For: STRUCTURALLY  
DETERMINED METALLO-  
CONSTRUCTS AND  
APPLICATIONS

: Art Unit: Unknown  
: Examiner: Unknown      APR 01 2000  
:  
: TECH CENTER 1600/

## TECH CENTER 1600/



## INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

SIR:

Pursuant to 37 C.F.R. §§ 1.97 and 1.98 and to the duty of disclosure set forth in 37 C.F.R. § 1.56, the Examiner in charge of the above-identified application is requested to consider and make of record the references listed on the PTO 1449 submitted herewith. A copy of each of the listed references is also enclosed.

Although the information submitted herewith may be "material" to the Examiner's consideration of the subject application, this submission is not intended to constitute an admission that such information is "prior art" as to the claimed invention.

In accordance with 37 C.F.R. § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made.



INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)			ATTY DOCKET NO. 70025-990	SERIAL NO. 09/483,837		
			APPLICANT(S) Shubh D. Sharma	FILING DATE January 17, 2000		GROUP Unknown
U.S. PATENT DOCUMENTS						
EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	4,390,528	06/28/83	NAJJAR	424	177	
	4,427,646	01/24/84	OLEXA et al.	424	1.1	
	4,479,930	10/30/84	HNATOWICH	424	1.1	
	4,578,079	03/25/86	RUOSLAHTI et al.	623	11	
	4,650,787	03/17/87	SCHALLY et al.	514	11	
	4,668,503	05/26/87	HNATOWICH	424	1.1	
	4,680,276	07/14/87	BACH et al.	436	542	
	4,732,864	03/22/88	TOLMAN	436	547	
	4,849,505	07/18/89	STAVRIANOPOULOS	530	300	
	4,859,765	08/22/89	NESTOR, JR. et al.	530	333	
	4,863,898	09/05/89	ASHMEAD et al.	514	6	
FOREIGN PATENT DOCUMENTS						
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
						YES
	2,016,235	11 Sep 90	Canada			
	94810008.6	10 Jan 94	EPO			
	PCT/US93/05372	04 Jun 93	PCT			
	PCT/US93/04794	21 May 93	PCT			
	PCT/US93/03687	19 Apr 93	PCT			
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)						
		"Conformational Restrictions of Biologically Active Peptides Via Amino Acid Side Chain Groups" by V. J. Hruby. Life Sciences, Vol. 31, pp. 189-199.				
		"Complexes of Technetium-99m with Tetrapeptides, a New Class of Tc-labelled Agents" by H.P. Vanbilloen et al. Nuc. Med. Bio., 22: 325-337.				
		"Secondary Structure Nucleation in Peptides. Transition Metal Ion Stabilized $\alpha$ -Helices" by M.R. Ghadiri et al. J. Am. Chem. Soc. 1990. Vol. 112, No. 4. pp. 1630-1632				
		"Peptide Architecture. Design of Stable $\alpha$ Helical Metallopeptides via a Novel Exchange-Inert Ru iii Complex" by M.R. Ghadiri et al. J. Am. Chem. Soc. 1990, Vol. 112, No. 26. pp. 9633-9635				
EXAMINER			DATE CONSIDERED			
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.						

**INFORMATION DISCLOSURE CITATION**  
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**U.S. PATENT DOCUMENTS**

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		4,883,861	11/28/89	GRILL et al.	530	324	
		4,986,979	01/22/91	MORGAN, JR. et al.	424	1.1	
		5,028,593	07/02/91	NISHIOKA	514	18	
		5,023,237	06/11/91	PICKART	514	18	
		5,059,588	10/22/91	PICKART	514	12	
		5,091,176	02/25/92	BRAATZ et al.	424	78.17	
		5,118,665	06/02/92	PICKART	514	6	
		5,157,023	10/20/92	LIPTON	514	18	
		5,196,510	03/23/93	RODWELL et al.	530	324	
		5,200,504	04/06/93	GHADIRI	530	304	
		5,214,131	05/25/93	SANO et al.	530	345	

**FOREIGN PATENT DOCUMENTS**

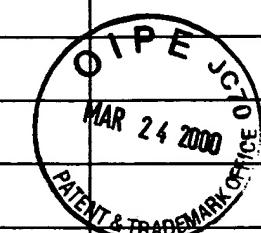
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		PCT/US93/02320	12 Mar 93	PCT				
		PCT/US92/10716	19 Nov 92	PCT				
		PCT/US94/06274	03 Jun 94	PCT				
		PCT/US94/08335	21 Jul 94	PCT				
		PCT/US92/00757	07 Feb 92	PCT				

**OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, Etc.)

		"A Convergent Approach to Protein Design. Metal Ion-Assisted Spontaneous Self-Assembly of a Polypeptide into a Triple-Helix Bundle Protein" by M.R. Ghadiri et al. J. Am. Chem. Soc. 1992, Vol. 114; No. 3. pp. 825-831.
		"Synthesis and Radiochemical Studies of Model Chelators For Tc-99m" by P.R. Singh et al. Proceedings of the 43rd Annual Meeting, Journal of Nuclear Medicine. June 4, 1996. p. 28p.
		"A Review of the Utility of Soluble Peptide Combinatorial Libraries" by C. Pinilla et al. Biopolymers (Peptide Science), Vol. 37, 1995. pp. 221-240.
		"Design of Metal ion Binding Peptides" by R. Fattorusso et al. Biopolymers (Peptide Science), Vol. 37, 1995. pp. 401-410.

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		5,225,180	07/06/93	DEAN et al.	424	1.1	
		5,328,840	07/12/94	COLLER	435	240.2	
		5,371,184	12/06/94	RAJAGOPALAN et al.	530	324	
		5,382,513	01/17/95	LAM et al.	435	7.1	
		5,382,654	01/17/95	LYLE et al.	530	311	
		5,395,609	03/07/95	STUTTLE	424	1.69	
		5,408,036	04/18/95	GHADIRI	530	304	
		5,410,020	04/25/95	GHADIRI	530	333	
		5,438,119	08/01/95	RUTTER et al.	530	333	
		5,440,013	08/08/95	KAHN	530	317	
		5,443,815	08/22/95	DEAN et al.	424	1.41	

**FOREIGN PATENT DOCUMENTS**

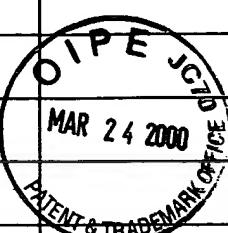
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
		PCT/US93/06029	23 Jun 93	PCT				

**OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, Etc.)

		"Novel Biopolymers for Drug Discovery" by E.J. Moran et al. Biopolymers (Peptide Science) Vol. 37, 1995. pp. 213-219.
		"One-Bead-One-Structure Combinatorial Libraries" by M. Lebl et al. Biopolymers (Peptide Science) Vol. 37, 1995. pp. 177-198.
		"Discovery of Sequence-Selective Peptide Binding by Synthetic Receptors Using Encoded Combinatorial Libraries" By W.C. Still. Acc. Chem. Res. 1996, Vol. 29, No. 3. pp. 155-163.
		"Strategy and Tactics in Combinatorial Organic Synthesis. Applications to Drug Discovery" By E.M. Gordon et al. Acc. Chem. Res. 1996, Vol. 29, No. 3. pp. 144-154.

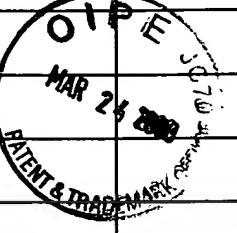
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,443,816	08/22/95	ZAMORA et al.	424	1.69		
		5,464,934	11/07/95	DUNN et al.	530	326		
		5,470,753	11/28/95	SEPETOV et al.	436	89		
		5,475,085	12/12/95	KAHN	530	317		
		5,556,609	09/17/96	ZAMORA	424	1.69		
		5,569,745	10/29/96	GOODBODY et al.	530	328		
		5,670,155	09/23/97	KAHN	424	208.1		
FOREIGN PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)								
		'Design, Synthesis, and Evaluation of Small-Molecule Libraries' By J.A. Ellman. Acc. Chem Res. 1996, Vol. 29, No. 3. pp. 132-143.						
		'Multiple-Component Condensation Strategies for Combinatorial Library Synthesis' By R.W. Armstrong et al. Acc. Chem. Res. 1996, Vol. 29, No. 3. pp. 123-131.						
		Guest Editorial by A.W. Czarnik. Accounts of Chemical Research, Vol. 29, No. 3, March 1996. pp. 112-113.						
		'Synthesis and Applications of Small Molecule Libraries' by L.A. Thompson et al. Chem Rev. 1996, Vol. 96, No. 1. pp. 555-600.						
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				FILING DATE <b>January 17, 2000</b>		GROUP <b>Unknown</b>		
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<b>*EXAMINER INITIAL</b>		<b>DOCUMENT NUMBER</b>	<b>DATE</b>	<b>NAME</b>	<b>CLASS</b>	<b>SUBCLASS</b>	<b>FILING DATE IF APPROPRIATE</b>	
								
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							<b>YES</b>	<b>NO</b>
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>								
		"Combinatorial Organic Synthesis Using Parke-Davis's DIVERSOMER Method" by S.H. DeWitt et al. <i>Acc. Chem. Res.</i> 1996, Vol. 29, No. 3. pp. 114-122.						
		"The Use of Light-Directed Combinatorial Peptide Synthesis in Epitope Mapping" by C.P. Holmes et al. <i>Biopolymers (Peptide Science)</i> Vol. 37, 1995. pp. 199-211.						
		"The Galvanization of Biology: A Growing Appreciation for the Roles of Zinc" By J.M. Berg et al. <i>Science</i> , Vol. 271. 2/23/96. pp. 1081-1085.						
		"Imaging Focal Sites of Bacterial Infection in Rats with Indium-111-Labelled Chemotactic Peptide Analogs" By A.J. Fischman et al. <i>The Journal of Nuclear Medicine</i> , Vol. 32, No. 3, March 1991. pp. 483-491.						
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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION		
							YES	NO	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)									
		"In-111 Laminin Peptide Fragments for Malignant Tumor Detection" By D. Swanson et al. Jour. Nuc. Med. Vol. 34 Np. 5, 1993. p. 231P.							
		"The use of a chelating derivative of alpha melanocyte stimulating hormone for the clinical imaging of malignant melanoma" By E.P. Wraight et al. British Journal of Radiology, 1992, Vol. 65. pp. 112-118.							
		"BisMSH-DTPA A Potential Imaging Agent for Malignant Melanoma" By D.R. Bard et al. Annals of New York Academy of Sciences, Vol. 680, 1993. pp. 451-453.							
		"Prediction of The Secondary Structure of Proteins from Their Amino Acid Sequence" By P.Y. Chou et al. Graduate Department of Biochemistry, Brandeis University, Pub. No. 1195. pp. 45-148.							
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				Applicant(s) Shubh D. Sharma			
				Filing Date January 17, 2000		Group Art Unit Unknown	
<b>U.S. PATENT DOCUMENTS</b>							
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<b>FOREIGN PATENT DOCUMENTS</b>							
REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
<b>OTHER DOCUMENTS</b> <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i>							
	✓	"Conformation and complexation with metal ions of cyclic hexapeptides: cyclo (L-Leu-L-Phe-L-Pro)2 and cyclo [L-Cys(Acm)-L-Phe-L-Pro]2" By E. Ozeki et al. Int. J. Peptide Protein Res. 34, 1989. pp. 111-117.					
		"Design, Synthesis, and Complexing Properties of (1Cys-1'Cys,4Cys-4'Cys)-dithiobis(Ac-L1Cys-L-Pro-D-Val-L-4Cys-NH2). The First Example of New Family of Ion-Binding Peptides" J. Am. Chem. Soc. Vol. 115-25. pp. 11664-11670.					
	✓	"Homodimeric and Heterodimeric Bis(amino thiol) Oxometal Complexes with Rhenium(V) and Technetium(V). Control of Heterodimeric Complex Formation and an Approach to Metal Complexes that Mimic Steroid Hormones" By D.Y. Chi et al. J. Med. Chem., 1994, Vol. 37 No. 7, pp. 928-937					
		"Protein Structure" By V.J. Hruby et al. Synthetic Peptides, A User's Guide, 1992. pp. 24-33.					
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